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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,846

Applicant(s)

SWEI ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/20/03.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The rejection based on 35 USC 102 has been maintained. Also, new rejections based on 35 USC 103 have been added as necessitated by amendment. However, the rejection based on 35 USC 112 has been withdrawn based on the applicant's arguments and description in the disclosure.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims have been amended to cite "the isocyanate of said system consists essentially of blocked isocyanate." Although the specification indicates the desire to exclude free isocyanates, the specification does not give an indication of what other components would be included with the blocked isocyanate. Thus, it is not clear in the specification which components would be included or excluded from the blocked isocyanate component.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-2 and 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gladstone et al. as evidenced by Borsellino et al.
6. From a prior Office action:

7. Gladstone discloses an adhesive system for joining overlapped ends of a coated abrasive article comprising a component having free isocyanate groups, a hydroxyl terminated polyurethane polyester, and a member containing active hydrogen groups (abstract). Thus, the composition comprises an alcohol, more specifically a polyol, by the inclusion of the hydroxyl terminated polyurethane polyester prepolymer. Possible active hydrogen containing members include polyester- and polyether-polyurethane isocyanate blocked prepolymers (col. 6 lines 1-27). It is the examiner's position that both active hydrogen-containing components, because they are prepolymers, would be considered "high molecular weight". The reference notes suitable molecular weights of the hydroxyl terminated polyurethane polyesters to be between 2,000 and 4,000 (col. 5 lines 30-37). Gladstone teaches a method of providing the adhesive as a film on a coated abrasive strip, joining the ends of the strip, and heating the adhesive to cure the components (col. 9 lines 21-45). Both high molecular weight polyurethane prepolymers containing hydroxyl functionality and high molecular weight polyurethane blocked isocyanate prepolymers are present in the adhesive for crosslinking.

8. Gladstone teaches the urethane isocyanate blocked prepolymers, believing that the prepolymers are disclosed in prior patents. However, Gladstone does not mention the blocking agents used in the prepolymers. The Borsellino reference, referred to by Gladstone, teaches polyurethane isocyanate blocked prepolymers, where the isocyanates are blocked with imine, oxime, or ketoxime blocking agents (col. 3 lines 28-55). Thus, Gladstone suggests the use of such prepolymers blocked with oxime blocking agents.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gladstone et al.

9. From a prior Office action:

11. Gladstone teaches that active hydrogen containing components include isocyanate blocked prepolymers and amine-functional components (col. 6 lines 1-27). However, the reference does not exemplify the use of both compounds together. The shelf life can be optimized by choosing different compounds. It is the examiner's position that it would have been prima facie obvious to choose combinations of preferred materials, including an isocyanate blocked prepolymer and an amine-functional component, by conventional experimentation to optimize shelf life of the adhesive.

10. Claims 8-9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van et al. in view of Pufahl.

11. Van discloses abrasive articles, including endless belts. The endless belts are made by cutting strips of abrasive material, applying a urethane or other splicing adhesive, joining the ends of the strips, and heating the belt (col. 14 lines 44-65). However, the reference does not specify the type of adhesive to be used as a splicing adhesive. Pufahl discloses a pressure-sensitive adhesive (PSA) tape for splicing materials, where the adhesive is flame resistant and is capable of functioning at extreme temperatures (abstract). The tape is preferably a double-sided adhesive tape (col. 4 lines 36-41) and preferably comprises a crosslinking flame retardant of a blocked polyisocyanate (col. 13 lines 8-20). Example XVI shows a blocked polyisocyanate mixed with a melamine ether (col. 36) to form an ignition-resistant laminate. Because the abrasive articles of Van are used for applications where friction increases temperature, it is the examiner's position that it would have been prima facie obvious to

use the splicing adhesive of Pufahl's invention in the abrasive belts of Van's invention to provide an adhesive capable of withstanding high temperatures.

12. Claims 1-2, 4-8, and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Case as evidenced by Kalbow and in view of Oertel. Case (US 5,519,095 A) can be found on the applicant's Form PTO-1449.

13. Case discloses a method of forming an abrasive belt using an adhesive comprising a polyesterurethane, a crosslinking agent, and a reactive polyol solvent. The ends of an abrasive strip are joined together to form a loop, where the adhesive is used to adhere the ends (col. 1 lines 10-22). Heat is used to react the crosslinking agent with the polyesterurethane, where a number of Desmocoll urethanes are suitable for the urethane component (col. 2 lines 50-67), and a number of polyisocyanate components are suitable for the crosslinking agent (col. 4 lines 4-14). At least Desmocoll 176 is a polyurethane prepolymer polyol (Kalbow, col. 6 lines 8-13). Isocyanate prepolymers are noted for use as the crosslinking agent. However, the reference does not specify the use of blocked isocyanates as the crosslinking agent. Oertel teaches the conventionality of using blocked isocyanates instead of free isocyanate-containing compounds to improve stability at room temperature and prevent reaction for a desired amount of time. Conventional blocking agents mentioned are phenol, ketoxime, caprolactam, and malonate. Since Case notes the disadvantage of short cure times (col. 1 lines 46-60), it is the examiner's position that it would have been

prima facie obvious to block the isocyanates of Case's invention to prevent premature reaction of materials.

Response to Arguments

14. In response to the applicant's arguments that Gladstone does not teach an isocyanate component consisting essentially of a blocked isocyanate, it is the examiner's position that a coated belt formed from an adhesive with blocked isocyanate would be no different than a coated belt formed using both a blocked and unblocked isocyanate. When using blocked isocyanates, the blocking agent is removed during the cure process to react the isocyanate groups with isocyanate-reactive groups. Thus, Gladstone's cured adhesives formed from blocked isocyanates and free isocyanates would result in a cured polyurethane adhesive product, possibly having residual blocking agents present. Likewise, a cured adhesive from the present claimed invention formed from blocked isocyanates would result in a cured polyurethane adhesive product, possibly having residual blocking agents present. Without structural differences, it is the examiner's position that the coated abrasive products would be the same, and the products of Gladstone's invention anticipate the currently claimed product.

15. Regarding the applicant's arguments that Gladstone does not provide motivation for combining a blocked isocyanate urethane system with an amine compound, it is noted that Gladstone teaches that any active hydrogen material, including amines and hydroxyl-functional materials, may be used in the invention, also indicating that the

equivalent weight of the component may be chosen to optimize pot life (col. 6 lines 1-27). It has been the examiner's position that it would have been prima facie obvious to choose combinations of preferred materials to optimize shelf life of the adhesive. One of ordinary skill in the art would recognize that preferred materials can be combined without undue experimentation. Since the reference indicates that shelf life may be optimized by the choice of active-hydrogen material, it is the examiner's position that the combination of amine and blocked urethane prepolymer would have been an obvious modification to the adhesive. Also, because the reference teaches that active hydrogen compounds, including polyamines, having higher equivalent weights would have longer shelf life, it is the examiner's position that the combination of such a polyamine with a blocked isocyanate would also have prolonged shelf life.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb
May 19, 2003



James Seidleck
Supervisory Patent Examiner
Technology Center 1710